



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/573,174

03/23/2006

Rie Kojima

2006-0374 A

6653

52349

7590

07/29/2009

WENDEROTH, LIND & PONACK L.L.P.

1030 15th Street, N.W.

Suite 400 East

Washington, DC 20005-1503

EXAMINER

MULVANEY, ELIZABETH EVANS

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

07/29/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/573,174	Applicant(s) KOJIMA ET AL.	
	Examiner Elizabeth E. Mulvaney	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/17/09</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 4/23/09 have been fully considered but they are not persuasive. Applicant argues that the '837 reference does not disclose the claimed formula for the Ge-Bi-Te and/or Ge-Sn-Bi-Te alloys having Al, In, or Ga added thereto. However, the claims formulas (3) and (4) merely show the known alloy combinations for typical Ge-Bi-Te materials, i.e. alloying GeTe with Bi₂Te₃. The addition of a metal-tellurium portion of the alloy is the known method of introducing another substance into the overall recording layer. See US 6,858,277 col. 5.

The Double Patenting rejection is withdrawn, not because of the date of the patent, but because the claims sufficiently specify the addition of another alloying element in the recording layer, i.e. the addition of Sn, Al, Ga, or In.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,858,277.

The reference discloses a recording medium comprising a substrate, dielectric layer, phase-change recording layer, second dielectric layer, and reflective layer. The layers are formed within the thickness ranges claimed. See Examples. The layers are formed by sputtering. See Examples. The medium is read with a wavelength such as 660nm. See Examples. The recording layer is formed of a Ge-Bi-Te quasi-binary or ternary alloy including Sn and Al. See col. 5. It is recognized that the

Art Unit: 1794

reference does not specify the exact alloying ranges for the recording layer. However, it would have been obvious to one of ordinary skill in the art to vary the amounts of the elements in the interest of optimizing the recording properties.

Claims 3-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,858,277 in view of US 2003/0186164.

The reference discloses a recording medium comprising a substrate, dielectric layer, phase-change recording layer, second dielectric layer, and reflective layer. The layers are formed within the thickness ranges claimed. See Examples. The layers are formed by sputtering. See Examples. The medium is read with a wavelength such as 660nm. See Examples. The recording layer is formed of a Ge-Bi-Te quasi-binary or ternary alloy including Sn and Al. See col. 5. It is recognized that the reference does not specify the exact alloying ranges for the recording layer. However, it would have been obvious to one of ordinary skill in the art to vary the amounts of the elements in the interest of optimizing the recording properties. Further, it is recognized that the reference does not include the addition of In or Ga. However, the '164 reference shows that it is well-known to add elements such as Al, In, and Ga to reduce nucleation rates. See [0125].

Claims 3-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,416,837 in view of US 6,858,277.

The reference discloses a recording medium formed by sputtering on a substrate, a dielectric layer, a phase-change recording layer, a second dielectric layer, and a reflective layer. See Examples. the phase-change recording layer may be Ge-Bi-Te or Ge-Sn-Bi-Te having elements such as Al added thereto. It is recognized that the reference is silent as to the actual formulaic make-up of the layer. However, the '277 reference shows that it is known to mix quasi-binary or ternary alloys of GeTe, BiTe and MTe where M is Sn and/or Al. See col. 5. While the specific amounts of the

Art Unit: 1794

alloying elements are not exactly the same, it would have been obvious to one of ordinary skill in the art to vary the amounts of the elements added in the interest of optimizing the recording properties.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth E. Mulvaney whose telephone number is 571-272-1527. The examiner can normally be reached on Monday-Friday 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth E. Mulvaney/

Primary Examiner, Art Unit 1794